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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,930	12/29/2000	Hong Wang	884.366US1	7985

7590 05/22/2003
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EXAMINER

DAS, CHAMELI

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 05/22/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/751,930

Applicant(s)

WANG ET AL.

Examiner

C.DAS

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connors et al, "Compiler directed Dynamic Computation Reuse: Rationale and Initial Results", ACM, November, 1999 and further in view of Chaddha (US 6,215,910)

As per claim 1, Connors discloses: a method of identifying reusable computation (Connors, page 158, col 2, section A and page 162, col 1, section B), phrases of text and identifying recurrent phrases of text as reusable computation unit (Connors, page 158, col 2, section A, Connors, page 159, col 1 lines 1-36, page 165 col 1 and col 2 lines 1-2, page 168 col 2 section E). Connors discloses update the architectural state (Connors, page 162, section C and page 166, col 2, section D) and state vectors (Connors, page 166, col 1, lines 1-20).

Connors does not specifically disclose mapping multi dimensional architectural state into a plurality of one dimensional symbols and arrainging into phrase of text. However, Chaddha

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(US 6,215,910) discloses mapping multi dimensional architecture to a plurality of one dimensional architecture and arrainging into phrase of text (Abstract, col 6 lines 43-62, col 2 lines 22-28, col 4 lines 19-24, col 4 lines 49-53).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time of invention was made to incorporate the teaching of Chaddha into the method of Connors. The modification would be obvious because one of the ordinary skill in the art would be motivated to perform computation simpler and faster.

As per claim 2, Connors discloses traversing a software block in program execution order (Connors, page 165, col 2, section Acyclic region formation, and page 160, col 2, figure 2. assigning new symbols are encountered and previously assigned symbols are encountered (Connors, page 160 col 1 lines 9- col 2 page 164, col 1 line 1-28, page 159 col 2 section 2).

As per claim 3, Connors discloses new symbols comprises assigning consecutive integers (Connors, page 160, lines 15-30 and col 2 lines 28-50).

As per claim 4, Connors arranging symbols in program execution order (Connors, page 158 , Abstract, page 160 col 1, section Block-level reuse)

For claim 5, (Connors, page 166 col 1 lines 5-10, page 164 col 1).

3. Claims 6-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connors et al, "Compiler directed Dynamic Computation Reuse: Rationale and Initial Results", ACM, 1999, Chaddha (US 6,215,910) and further in view of Chung et al (5,481,472).

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For claim 6, (Connors, page 168 , col 1 section D and page 168 col 2 section E). Connors discloses the compression technique (Connors page 168, col 1, section D).

Neither Connors nor Chaddha disclose compression technique to find a plurality of recurrent phrase. However Chung discloses compression technique to find a plurality of recurrent phrase (Chung, abstract and col 3 lines 20-25). The modification would be obvious because one of the ordinary skill in the art would be motivated to detect the repeated pattern within the text.

For claim 7 Connors does not specifically discloses lossless compression. However, Chaddha discloses lossless compression (Chaddha, col 1 lines 43-50). The modification would be obvious because one of the ordinary skill in the art would be motivated to reduce the file size efficiently.

For claim 9, Connors does not specifically discloses lossy algorithm. However, Chaddha discloses lossy algorithm (Chaddha, col 2 lines 22-24). The modification would be obvious because one of the ordinary skill in the art would be motivated to apply the compression technique for video or speech compression.

4. Claims 8, 10-12, 22, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connors et al, "Compiler directed Dynamic Computation Reuse: Rationale and Initial Results", ACM, 1999, Chung, (5481472), Chaddha (US 6,215,910) and further in view of Ozluturk et al (US 6,516,022).

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For claim 8, (Connors, page 158 , col 1 section Introduction, page 167, col 1, page 167 col 2, section A, page 162 col 2 section C).

Neither Connors nor Chaddha disclose conjugate processor. However, Ozluturk discloses conjugate processor (Ozluturk, Abstract , lines 15-20). The modification would be obvious because one of the ordinary skill in the art would be motivated to produce corrected signals efficiently (Ozlutr, abstract lines 15-20).

For claim 10, (Connors, page 158 , col 1 section Introduction, page 167, col 1, page 167 col 2, section A, page 164 col 2, section A).

Neither Connors nor Chaddha disclose conjugate processor. However, Ozluturk discloses conjugate processor (Abstract , lines 15-20). The modification would be obvious because one of the ordinary skill in the art would be motivated to produce corrected signals efficiently. (Ozlutr, abstract lines 15-20).

For claim 11 (Connors, page 164, col 2 section B).

For claim 12 (Connors, page 164, section 4.1 Deterministic Computation, page 165 col 2 section Acyclic region formation, page 169 section summary lines 1-5).

For claim 22 see the rejection of claim 8.

For claim 28 see the rejection of claim 8.

For claim 30 see the rejection of claim 10.

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5. Claims 13-14, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connors et al, "Compiler directed Dynamic Computation Reuse: Rationale and Initial Results", ACM, 1999, further in view of Chung et al (5,481,472).

For claim 13, (Connors, page 159, col 2 section B, page 168, col 2 section D, page 168, col 2 section E, page 164, col 2 section B).

Connors discloses the compression technique (Connors page 168, col 1, section D).

Connors does not disclose that compression technique to find a plurality of recurrent phrase. However Chung discloses compression technique to find a plurality of recurrent phrase (Chung, abstract and col 3 lines 20-25). The modification would be obvious because one of the ordinary skill in the art would be motivated to detect the repeated pattern within the text.

For claim 14, (Connors, page 164, col 1 lines 1-27, page 164, fig 6, page 166 col 2 section 5.1).

For claim 19, see the rejection of claim 6.

For claim 20 (Connors, page 164, col 2 and page 165 col 2)

For claim 21 see the rejection of claim 12.

6. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connors et al in view of Chung (US 5481472) and Chaddha (US 6,215,910)

For claim 15 see the rejection of claims 1 and 3.

For claim 16, see the rejection of claims 1 and 5.

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7. Claims 17-18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connors et al in view of Chung (5,481,472) and Lopresti et al (5,832,474).

For claim 17 (Connors, page 168 col section D).

Neither Connors nor Chung disclose editing distance. However, Lopresti discloses editing distance by compress algorithm (col 11 lines 53-65). The modification would be obvious because one of the ordinary skill in the art would be motivated compare the cost of transforming one string into the other. (Col 11 lines 35-50).

For claim 29 see the rejection of claim 17.

For claim 18, (Connors, page 164 col 2).

8. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connors et al in view of Chung (5,481,472) and Chhaddha (6215910).

For claim 23 see the rejection of claims 6 and 20.

For claim 24 see the rejection of claim 1.

For claim 25 see the rejection of claim 5.

For claim 26 see the rejection of claim 1.

For claim 27 see the rejection of claim 7.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chameli Das whose telephone number is 703-305-1339.

The examiner can normally be reached on Monday-Friday from 7:00 A.M. to 4:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Greg Morse can be reached at 703-308-4789. The fax number for this group are:

(703) 746-7239 (official fax), (703) 746-7240 (non-official/draft), (703) 746-7238 (after final).

An inquiry of general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-9600.

Chameli C. Das

Chameli C. Das

Patent Examiner

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5/17/03